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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,291	09/22/2005	Hermann Goebels	037068.55856US	6376

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EXAMINER

NGUYEN, VU Q

ART UNIT	PAPER NUMBER
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3683

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/524,291

Applicant(s)

GOEBELS ET AL.

Examiner

Vu Q. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 02/11/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 13-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 16 recite the limitation "conduit". There is insufficient antecedent basis for this limitation in the claims. For the purposes of advancing prosecution, the Examiner assumes that there are two conduits, one for each working connection.

Claim 13 also recites the limitation "without inserting additional valves". However, the claim further recites the limitation "only one additional solenoid control valve". Together, these two limitations render the claim indefinite because the two limitations directly contradict each other. The Examiner suggests the use of the closed-type transitional phrase "consisting of" to distinctly claim which valves can be used in the valve assembly.

Claim 25 recites the limitation "the electronic unit". There is insufficient antecedent basis for this limitation in the claim. The Examiner assumes that the electronic unit is equivalent to the electronic controlling and regulating unit.

Claim 26 recites the limitations "only one pressure regulating valve", "only one second pressure regulating valve", and "only one additional pressure regulating valve".

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Similar to the reasoning above, these limitations taken together render the claim indefinite because the limitations directly contradict each other. The Examiner suggests the use of the closed-type transitional phrase "consisting of" to distinctly claim which valves can be used in the valve assembly.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13-22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (Goebels) in view of U.S. Patent No. 6371573 (Goebels et al.). UK Patent Document GB 2270130 (Goebels) will be referenced as the UK '130 reference in this Office Action.

Regarding **claim 13**, the UK '130 reference discloses in Fig. 2a, a pressure regulator module (100) for a vehicle pneumatic braking system for a wheel-slip-dependent controlling or regulating of braking pressures applied to two separate working connections (18, 19), the pressure regulator module (100) comprising: a two-way valve assembly (1) *consisting of* one relay valve (3, 4), respectively, for each *working connection* (18, 19), each relay valve (3, 4) having a control input (5); wherein a respective solenoid control valve (30, 30') (in the form of a proportional valve) is assigned to the control input (5) of each relay valve (3, 4); wherein the control valves (3,

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4), together with only one additional solenoid control valve (12) coupled on an input side of the module (100), connect the control input (5) of the respective relay valve (3, 4) with at least one of a bleeding system (11, 11'), a control pressure (13, 14), and a compressed-air reservoir (17); **[claim 14]** the solenoid control valves (30, 30') are controlled independently of one another (page 11, last paragraph) by an electronic controlling and regulating unit (2), and are connected on the input side with the control pressure (13, 14) and on an output side, in each case, with the control input (5) of the assigned relay valve (3, 4) and with the bleeding system (11, 11'); **[claims 17, 18, 19]** the only one additional solenoid control valve (12) is formed by an additional 3/2-way valve, which is controlled by the electronic controlling and regulating unit (2) and which is connected on the input side with the control pressure (13, 14) and with the compressed-air reservoir (17), and on the output side with the inputs of the two solenoid control valves (30, 30'); **[claim 20]** in a non-energized spring-loaded normal position, the only one additional solenoid control valve (12) switches the control pressure (13, 14) through to the inputs of the two solenoid control valves (30, 30'), and in an energized position, switches inputs of the two solenoid control valves (30, 30') through to the compressed-air reservoir (17); **[claim 21]** the only one additional solenoid control valve (12) is operated independently of the control pressure (13, 14) and as a function of a wheel slip occurring during an acceleration or of a lateral acceleration (page 12, last paragraph - page 14, first new paragraph); **[claim 22]** the only one additional solenoid control valve (12) is integrated in a housing (schematically indicated by the outer border of pressure regulator module 100) accommodating the valve assembly (1); **[claim 24]**

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center axes of the two relay valves (3, 4) are arranged coaxially and horizontally in the module (100).

Regarding **claim 26**, the UK '130 reference discloses in Fig. 2a, a pressure regulator module (100) for a pneumatic braking system of a utility motor vehicle, the pressure regulator module (100) comprising: a two-way valve assembly (1) having two conduits (left and right sides of module 100), a first conduit (left side of module 100) *consisting of* a first relay valve (3) and a *first* pressure regulating valve (30) (in the form of a proportional valve), which (proportional) valve is assigned to a control input (5) of the first relay valve (3), and a second conduit (right side of module 100) *consisting of* a second relay valve (4) and a second pressure regulating valve (30') (in the form of a proportional valve) assigned to a control input (5) of the second relay valve (4); and wherein the first and second pressure regulating valves (30, 30'), together with only one additional pressure regulating valve (12) coupled with an input side of the first and second pressure regulating valves (30, 30'), connect a control input (5) of the respective first and second relay valves (3, 4) with a bleeding system (11, 11'), a control pressure (13, 14), or a compressed-air reservoir (17).

Regarding **claim 13**, the UK '130 reference does not disclose expressly that the respective solenoid control valves (30, 30') are in the form of a 3/2-way valve having two switching positions; **[claim 15]** in a non-energized spring-loaded normal position, the solenoid control valves (30, 30') switch the control pressure (13, 14) through to the control inputs (5) of the relay valves (3, 4) and, in an energized position, switch the control inputs (5) of the relay valves (3, 4) through to the bleeding system (11, 11');

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[claim 16] for holding the pressure at the respective working connection (18, 19), the assigned solenoid control valve (30, 30') is alternately switched back and forth in a pressure buildup position and a pressure reduction position by the controlling and regulating unit (2).

Regarding **claim 16**, the UK '130 reference does not disclose expressly that the first and second pressure regulating valves (30, 30') are in the form of 3/2-way valves.

Goebels et al. disclose in Figs. 6 and 7, a solenoid control valve (55), in the form of a 3/2-way valve having two switching positions, assigned to the control input of a relay valve (57). In a non-energized normal position, the solenoid control valve (55) switches a control pressure (54) through to a control input of the relay valve (57) and, in an energized position, switches the control input of the relay valve (57) through to a bleeding system (53). Thus, the solenoid control valve (55) has a pressure buildup position (non-energized) and a pressure reduction position (energized). During an ABS mode, the solenoid control valve (55) can also hold a pressure at a brake cylinder (59) by alternately switching back and forth in the pressure buildup position (non-energized) and the pressure reduction position (energized) under the control of an electronic controlling and regulating unit (19) (abstract; column 7, line 22 - column 8, line 41).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the proportional valves of the valve assembly taught by the UK '130 reference with 3/2-way valves as taught by Goebels et al. The suggestion/motivation for doing so would have been to utilize a less-expensive way of

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increasing, reducing, and holding pressure. Furthermore, 3/2-way valves are easier to control because they only have two switching positions, whereas proportional valves have continuously changing positions (current is varied in an analog manner as opposed to digital). Since 3/2-way valves are capable of holding pressure by alternately switching between pressure buildup and pressure reduction positions as taught by Goebels et al., 3/2-way valves are capable of functioning in a similar manner to the proportional valves taught by the UK '130 reference. Thus, it would have been obvious to a person of ordinary skill in the art to use 3/2-way valves, which are cheaper and easier to control, instead of proportional valves.

5. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (Goebels) (UK '130) in view of U.S. Patent No. 6371573 (Goebels et al.) as applied to claims 13-22, 24, and 26 above, and further in view of UK Patent Document GB 2136521 (Goebels). UK Patent Document GB 2136521 (Goebels) will be referenced as the UK '521 reference in this Office Action.

The UK '130 reference and Goebels et al. disclose a pressure regulator module and the use of 3/2-way valves as solenoid control valves respectively, as applied to claims 13-22, 24, and 26 above.

The UK '130 reference or Goebels et al. do not disclose expressly that **[claim 23]** the only one additional solenoid control valve (12) is arranged outside a housing accommodating the remaining valve assembly (1) consisting of the two relay valves (3,

4), and the assigned solenoid control valves (30, 30'), and is constructed to be connectable to this valve assembly (1).

The UK '521 reference discloses in Fig. 2, a solenoid control valve (25) arranged outside a housing accommodating a valve assembly (42, 7, 8), and is constructed to be connectable to this valve assembly (42, 7, 8).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the valve assembly taught by the UK '130 reference so that the only one additional solenoid control valve is arranged outside the housing accommodating the remaining valve assembly as taught by the UK '521 reference. The suggestion/motivation for doing so would have been to allow easier access to the only one additional solenoid control valve. Furthermore, since the valve assembly taught by the UK '130 reference is merely depicted as a schematic diagram, it would be obvious to one of ordinary skill in the art to simply re-locate or move components to desirable locations, as seen in the UK '521 reference, as long as electrical and mechanical connections are kept intact.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Document GB 2270130 (Goebels) (UK '130) in view of U.S. Patent No. 6371573 (Goebels et al.) as applied to claims 13-22, 24, and 26 above, and further in view of U.S. Patent No. 6264289 (Franke et al.).

The UK '130 reference and Goebels et al. disclose a pressure regulator module and the use of 3/2-way valves as solenoid control valves respectively, as applied to claims 13-22, 24, and 26 above.

The UK '130 reference or Goebels et al. do not disclose expressly that **[claim 25]** an acceleration sensor is provided for detecting a lateral acceleration, which sensor is integrated in the electronic controlling and regulating unit.

Franke et al. disclose in Fig. 3, a vehicle braking system comprising an electronic controlling and regulating unit (41), in which an acceleration sensor (10; see Fig. 1) for detecting a lateral acceleration, is integrated in the electronic controlling and regulating unit (41) (column 4, lines 47-52).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the electronic controlling and regulating unit taught by the UK '130 reference so that it is integrated with an acceleration sensor for detecting lateral acceleration as taught by Franke et al. The suggestion/motivation for doing so would have been to provide lateral acceleration data for better control. Furthermore, integrating the acceleration sensor in the electronic controlling and regulating unit would further provide a unitary configuration that represents economic and space-saving solutions, as taught by Franke et al. (column 5, lines 32-36).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Q. Nguyen whose telephone number is (571) 272-

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7921. The examiner can normally be reached on Monday through Friday, 8:30 AM to 5:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on (571) 272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VQN


JAMES MCCLELLAN
SUPERVISORY PATENT EXAMINER
3-19-07